查询MLX12101供应商

Melexis
Microelectronic Integrated Systems

MLX12101

Sensor Protection IC

Features and Benefits

Small package (SOT-89)
Low dropout voltage (typical 30mV)
Large temperature range
Overvoltage protection
Reverse polarity protection
Low supply current

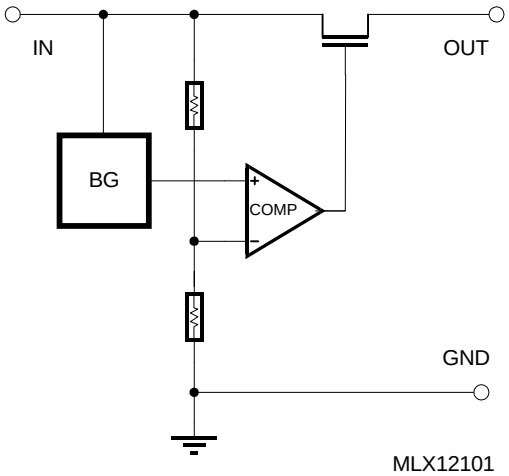
Applications

Sensor Overvoltage Protection
Sensor Reverse Polarity Protection

Ordering Information

Part No.	Temperature Suffix	Package	Option	Temperature Range
MLX12101	E	SA	N/A	-40C to 85C Extended

Functional Diagram



MLX12101

Description

The MLX12101 serves as a protection circuit where sensible 5V IC's are supplied by long wires that can be short-circuited to the wiring harness of a car.
The IC is to be connected between a 5V supply, and a 5V powered remote application. The IC is set on the remote application side, its input receiving the 5V supply through the car wiring, and its output delivering the 5V protected supply to the local application.
When the input is below 5.5 Volt, the switch between 5V input and 5V output is closed and the application is powered. When the 5V input goes above 6.8 Volt (This case occurs when the supply wire is short-circuited to battery plus), the output is shut off. When the chip input goes negative (this is the case when the battery is reversed), a reverse polarity diode prevents the output of going negative.

MLX12101 Electrical Specifications

DC Operating Parameters T_A = -40°C to 135°C, V_{DD} = 5V (unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Recommended Operating Conditions						
Input Voltage			4.5	5.0	5.5	V
Output Current				8		mA
Output Signal Specifications						
Switch-Off Time (Vou <5V)		Vin jump from 5V to 12V		150	1000	µs
Reverse Current		Through Vout with Vdd and Vss connected			5	mA
Reverse Output Voltage					Vss-1	V
Voltage drop-out, Vout-Vin		Vin = 4.5V Iout = 8mA			55	mV
General Specifiactions						
Overall Supply Current		No Load			500	µA
		Vin = 5V Rload Pin = 22R		190		mA
Swoitching Voltage	Vt		5.5		6.8	V

MLX12101 Absolute Maximum Ratings

Parameter	Value	Unit	Comment
Max Operating Voltage Range	-14 to 16	V	
Max Output Current	100	mA	
Supply Current	0.5	mA	
Operating temperature	-40 to 150	°C	
Max junction temperature	150	°C	

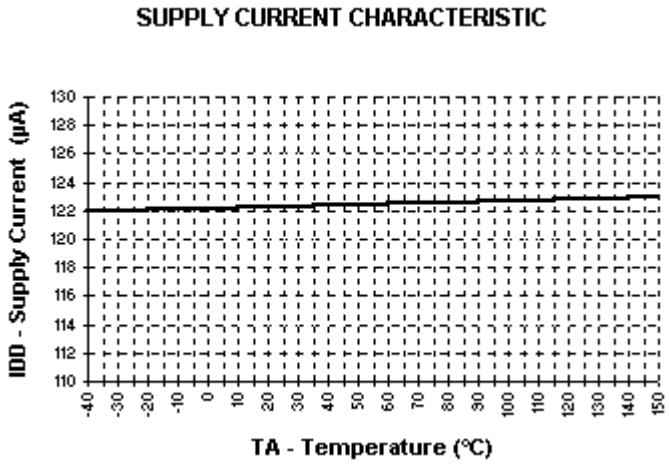


Figure 2

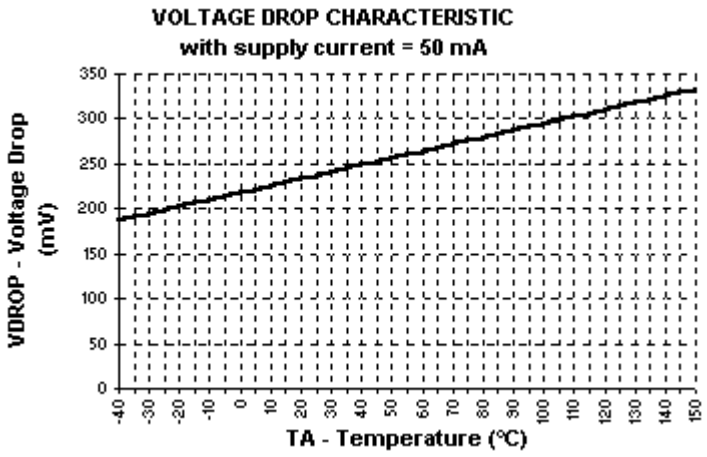


Figure 3

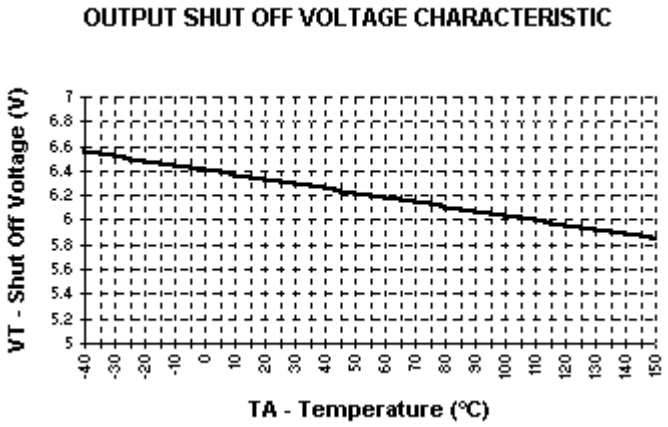
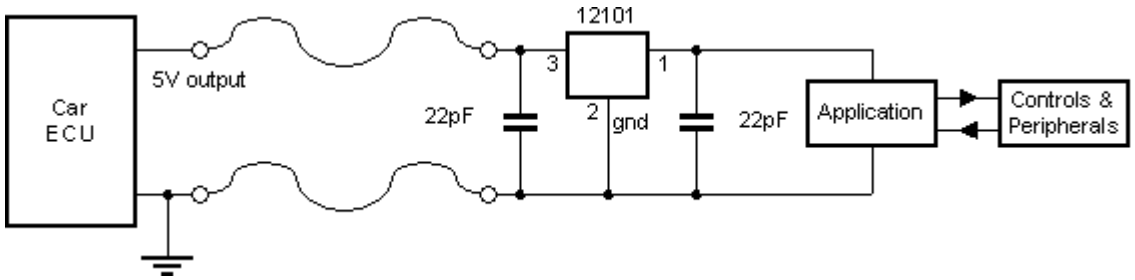


Figure 4

Typical Circuit Diagram

The 12101 is designed for EMC protection in automotive applications.

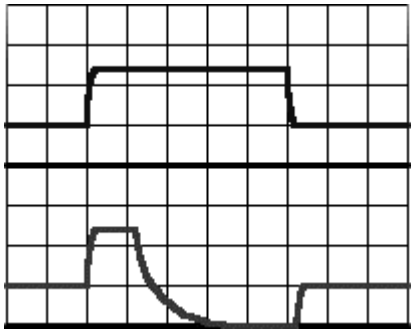
Figure 5



MLX12101 Overshoot Switch-off Timing

Input 5~12V

Output 0~12V

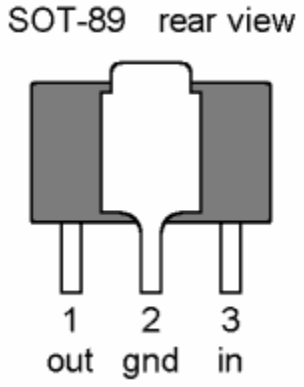


5V/div.

50µS/div.

MLX12101 Pinout - SA (SOT-89A) Package

Pin number	Description
1	5V output
2	Ground
3	5V input



SOT-89A - Rear View

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